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ABSTRACTS ON CROP CONDITIONING



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BEANS - 1948

Washington report, Bean Drying by W. E. Matson. 1948.

Describes a small experimental pilot dryer; air temperature;
air flow; germination quality; percent of cracked beans;
static pressure; energy consumption; and moisture content.

COTTON SEED - 1949

North Carolina Agricultural Engineering Information Circular No. 2, An Analysis of Principal Crop Production and Distribution in North Carolina to Determine the Preliminary Requirements and Specifications for a Farm Crop Dryer by J. W. Weaver, Jr., S. H. Usry, and N. C. Teter. January 1949. Gives production figures and locations for state; potential drying needs by principal crop areas; drying volume needed for crop; recommendations for air, static pressures, heat and depth of crop; and potential drying needs.

Texas Agricultural Experiment Station Tri-Annual Report, Drying and Storage of Farm Crops by J. W. Corenson. December 1949. Reports on tests for determining the resistance of cottonseed to air flow.

Georgia mimeographed bulletin, The Why and How of Drying Seed Corn by J. W. Simons. March 8, 1949. Generally discusses conditioning and storage of ear and shelled seed corn; methods of drying; adapting cribs and bins to forced air drying; experimental driers at the University; results of tests showing effect of temperature, moisture content, drying time, air flow; recommends fan sizes for typical installations; and discusses commercial driers briefly.

Illinois - see U. S. D. A. reprint of paper entitled, Progress in Methods of Drying Corn. Agricultural Engineering. March 1949.

Indiana - see U. S. D. A. reprint of paper entitled, Progress in Methods of Drying Corn. Agricultural Engineering. March 1949.

Iowa - see U. S. D. A. reprint of paper entitled, Progress in Methods of Drying Corn. Agricultural Engineering. March 1949.

Michigan - see U. S. D. A. reprint of paper entitled, Progress in Methods of Drying Corn. Agricultural Engineering. March 1949.

North Carolina - reprint of paper, The Development of a Farm Crop Drier by J. W. Weaver, Jr., N. C. Teter, and S. H. Usry. Agricultural Engineering, October 1949. Discusses past history and development; crop conditioning installations in Southeast; drying needs; and describes crop drying building.

North Carolina Agricultural Experiment Station unnumbered pamphlet, Farm Crop Drier. May 1949. Crops - ear corn for feed, hybrid seed corn. Plans for crop drying building; recommendations for air temperature; moisture; depth of crop; time required; and maximum capacity of installation.

North Carolina Agricultural Engineering Information Circle No. 2, An Analysis of Principal Crop Production and Distribution in North Carolina to Determine the Preliminary Requirements and Specifications for a Farm Crop Drier by J. W. Weaver, Jr., S. H. Usry, and N. C. Teter, January 1949. Crops - feed corn and hybrid seed corn. Gives production figures and locations for state; potential drying needs by principal crop areas; drying volume needed for specified crops. Recommendations for air, static pressure, heat, and depth of crop are given. Potential drying seasons are tabulated.

Ohio - see U. S. D. A. reprint of paper entitled, Progress in Methods of Drying Corn. Agricultural Engineering. March 1949.

U. S. Department of Agricultural Farmers Bulletin No. 2010, Storage of Ear Corn on the Farm by C. A. Shedd. September 1949. A comprehensive bulletin which covers building requirements; precautions

EAR CORN - 1949 (Cont'd.)

to be taken; types of cribs; construction features; conveniences for handling corn with mechanical drying; heated and unheated air; air volume; moisture limits; cost of drying corn; rat control; and plans for storages.

U. S. Department of Agriculture reprint of paper entitled, Progress in Methods of Drying Corn by C. K. Shedd. Agricultural Engineering, March 1949. Discusses drying by natural ventilation; its limitations and recommended practices; mechanical drying with heated and unheated air; summary of test results at Iowa, Illinois, Indiana, Michigan and Ohio; improvement of commercial equipment; and safety controls for oil-burning driers.

EAR CORN - 1948

Illinois - see U. S. D. A. mimeographed bulletin, Report on Tests of Drying Ear Corn in Farm Cribs, 1947 - 1948 and Information Series No. 89, Mechanical Drying of Corn on the Farm. September 1948.

Indiana - see U. S. D. A. mimeographed bulletin, Report on Tests of Drying Ear Corn in Farm Cribs, 1947-1948 and Information Series No. 89, Mechanical Drying of Corn on the Farm. September 1948.

Indiana mimeographed Bulletin No. 14, Mechanical Drying of Ear Corn on Indiana Farms by A. W. Cooper, December 1948. Discusses structures; equipment and procedures for drying ear corn with both heated and unheated air; makes recommendations regarding moisture; and temperature requirements and limitations. Good charts and diagrams are included. Covers the subject thoroughly.

Iowa - see U. S. D. A. mimeographed bulletin, Report on Tests of Drying Ear Corn in Farm Cribs, 1947-1948 and Information Series No. 89, Mechanical Drying of Corn on the Farm. September 1948.

Kentucky mimeographed Bulletin 190, Methods of Handling and Storing Ear Corn by J. B. Kelley and J. L. McKittrick, October 11, 1948. Describes in detail (with diagrams) the structures which can be used for storage; adaptation of structures to forced air drying; and curing with natural ventilation. Discusses briefly the use of heated air equipment but does not recommend temperatures. Briefly describes temporary cribs and rat proofing of storages.

Michigan - see U. S. D. A. mimeographed bulletin, Report on Tests of Drying Ear Corn in Farm Cribs, 1947-1948 and Information Series No. 89, Mechanical Drying of Corn on the Farm. September 1948.

EAR CORN - 1948 (Cont'd.)

Nebraska Bulletin E. C. 738 Revised, Conditioning and Storing Corn by E. A. Olson and F. D. Yung. September 1948. Gives much valuable information. Covers methods of drying; heated and unheated forced air; natural ventilation; types of fans which may be used and their operating characteristics; equipment for heating air and precautions to be taken; temperatures recommended; and operation of equipment. Many useful tables, formulae and diagrams are given.

North Carolina Extension Circular No. 328, Drying Crops with a Flue Tobacco Barn by H. M. Ellis and J. W. Weaver, Jr. October 1948. Shows plans of the dryer; installation and operation of the equipment and crop drying table gives requirements for air, heat, static pressure, depth of crop, time to dry, capacity of dryer, and drying season. Crops - corn for feed and hybrid seed corn.

Ohio - see U. S. D. A. mimeographed bulletin, Report on Tests of Drying Ear Corn in Farm Cribs, 1947-1948 and Information Series No. 89, Mechanical Drying of Corn on the Farm. September 1948.

U. S. Department of Agriculture mimeographed bulletin, Report on Tests of Drying Ear Corn in Farm Cribs, 1947 - 1948 by C. K. Shedd, L. E. Holman and A. W. Cooper. Specifications for portable corn driers; preparation of cribs; results of tests showing rates of air flow and fuel consumption; rates of drying; cost of drying; damage to corn during drying; benefits; and drier improvements. Includes tables, charts and diagrams.

U. S. Department of Agriculture reprint of a paper entitled, Types and Performance of Farm Grain Driers by W. V. Hukill, BPICAE, Agriculture Engineering, February 1948. A general discussion of drying problems, temperatures, air movement and limitations of driers. Discusses utilizing all the heat of combustion.

U. S. Department of Agriculture. Information Series No. 89, Mechanical Drying of Corn on the Farm by C. K. Shedd. September 1948. Covers methods of using high-moisture corn; mechanical drying; advantages and disadvantages; preparation of cribs; air distribution; heated and unheated air; moisture limits; cost of drying; drying damage; equipment requirements; and recommendations.

EAR CORN - 1947

Indiana - see U. S. D. A. Information Series No. 83, Preparation of Cribs for Artificial Drying. 1947.

Nebraska Agricultural Engineering Progress Report No. 14-A, Supplementary Report on Ear Corn Drying by F. D. Yung, I. L. Hathaway and T. A. Kicselbach. July 1947. Describes results of tests in drying ear corn at various temperatures (120, 140, 160, 180, 200 and 240 degrees F.); and preliminary indications of feeding values and temperature relationship and commercial grading as affected by drying temperatures.

Ohio - see U. S. D. A. Information Series No. 83, Preparation of Crib for Artificial Drying. 1947.

Texas Progress Report No. 1070, Hay and Grain Drying 1946 by J. W. Sorenson, Jr., P. T. Montfort, H. P. Smith and J. P. Hollingsworth. March 1947. General considerations are given for the use of heated air; air requirements; static pressures; summary of 1946 results; description of equipment; description and operation of several individual farm drying installations; and commercial drier development.

U. S. Department of Agriculture mimeographed bulletin, General Specifications for Farm Ear Corn Drier by BPISAE. August 14, 1947. Gives general requirements and description of drier; including fan requirements; power unit; type of duct to be used; furnace recommendations; safety measures; workmanship and materials; operating instructions; and service by vendor. Information pertains to commercial drier units.

U. S. Department of Agriculture Information Series No. 83, Preparation of Crib for Artificial Drying by W. V. Hukill and C. K. Shedd, BPISAE. August 15, 1947. Covers preparation of the corn; distribution of air; amount of corn to be dried; temperatures; duct size; and examples of crib preparation with drawings showing direction of air flow.

U. S. Department of Agriculture, a reprint of a paper entitled, Basic Principles in Drying Corn and Grain Sorghum by W. V. Hukill, BPISAE. Agricultural Engineering, August 1947. A general discussion of the factors affecting the economic operation and design of grain driers with suggestions as to how approximate drying time can be computed; and summary of a few test results.

U. S. Department of Agriculture, Information Series No. 84, Questions and Answers About Ear Corn Drying. November 1947. Discusses 1,000 bushel crib; moisture content allowable; use of mechanical drier; size of drier needed; time to reduce moisture; attaching drier to crib; fire hazards; operating drier during winter; use of heat; corn quality and heat, and cost per bushel. Discusses 3,000 bushel double crib; changes in crib for drying; size drier needed; insurance on crib; drier efficiency; moisture content for long time storage; quality of corn and selling price, and cost per bushel for drying.

U. S. Department of Agriculture mimeographed bulletin, Crib Storage of Ear Corn by C. K. Shedd. July 16, 1947. Discusses limitations of crib storage; crib width requirements; improving crib storages; adapted hybrids to be used; delayed harvest; preparation of corn for drying; crib ventilators; summary; and effects of moisture on corn grade.

EAR CORN - 1947 (Cont'd.)

U. S. Department of Agriculture mimeographed report, Recommendations on Mechanical Conditioning of Soft or High - Moisture Corn by BPISAE. July 21, 1947. Discusses recommended practices; use of heated and unheated air; heater and fan capacities; temperature; fuels; adapting cribs for fans; and drying facilities.

EAR CORN - 1945

U. S. Department of Agriculture Farmer's Bulletin No. 1976, Handling and Storing Soft Corn on the Farm by C. K. Shedd. September 1945. Discusses drying rate of corn on stalk; methods of handling soft corn; clean husking; crib requirements; methods of increasing air movement in cribs (natural ventilation); forced air drying with both heated and unheated air; temporary crib construction; moisture limitations for cribbing; and salting soft corn.

EAR CORN - 1937

Oregon Station Bulletin 352, Corn Drying by E. E. Price and Ivan Branton. June 1937. Discusses natural draft drying; equipment needed and air velocities for various depths; characteristics of driers; and use of heated air. Makes recommendations for moisture, temperature, fan and drier capacities.

Georgia mimeographed bulletin, The Why and How of Drying Seed Corn by J. W. Simons. March 8, 1949. Generally discusses conditioning and storage of seed corn; methods of drying seed corn; adaptation of cribs and bins to forced air drying; arrangement of experimental drying at the University; results of tests are given showing effect of temperature, moisture content, drying time, air flow; recommends fan sizes for typical installations; and discusses commercial dryers briefly. Crops - ear and shelled seed corn.

Georgia mimeograph bulletin, The Use of Chemically-Dehydrated Air in Drying Grain and Seed by J. W. Simons. April 22, 1949. A discussion of the design, operation and results of experimental equipment used in these texts. Describes a farm-size unit similar to laboratory model used to dry blue lupine seed and gives results.

Illinois - See U. S. D. A. reprint of paper entitled, Progress in Methods of Drying Corn. Agricultural Engineering, March 1949.

Indiana - See U. S. D. A. reprint of paper entitled, Progress in Methods of Drying Corn. Agricultural Engineering, March 1949.

Iowa - See U. S. D. A. reprint of paper entitled, Progress in Methods of Drying Corn. Agricultural Engineering, March 1949.

Michigan - See U. S. D. A. reprint of paper entitled, Progress in Methods of Drying Corn. Agricultural Engineering, March 1949.

Nebraska Bulletin E. C. 736, Grain Drying with Forced Air Circulation by E. A. Olson, G. M. Peterson and F. D. Yung. June 1949. Crops - wheat, shelled corn, sorghum. Moisture content for safe storage of each crop is given; methods of preventing "sick wheat"; adapting bins for forced air circulation; equipment and power requirements; calculating fan capacity; operation of system; and requirements for grain storage structures.

North Carolina reprint of paper, The Development of a Farm Crop Drier by T. W. Weaver, Jr., N. C. Teter and S. H. Usry. Agricultural Engineering, October 1949. Crops - shelled corn, small grain, seed crops. Discusses past history and development; crop conditioning installations in Southeast; drying needs; and describes crop drying building.

North Carolina Agricultural Experiment Station unnumbered pamphlet, Farm Crop Drier. Crops - shelled corn, wheat, oats, barley, grain sorghum. Plans for crop drying building; and recommendations for air temperature, moisture, depth of crop, time required, and maximum capacity of installation.

GRAIN - 1949 (Cont'd.)

North Carolina Agricultural Engineering Information Circular No. 2, An Analysis of Principal Crop Production and Distribution in North Carolina to Determine the Preliminary Requirements and Specifications for a Farm Crop Dryer by J. W. Weaver, Jr., S. H. Usry, and M. C. Teter. January 1949. Crops - shelled corn, wheat, oats. Gives production figures and locations for state; potential drying and curing needs by principal crop areas; drying volume needed for specified crops; recommendations for air, static pressure, heat, depth of crop; and potential drying or curing seasons.

Ohio - See U. S. D. A. reprint of paper entitled, Progress in Methods of Drying Corn. Agricultural Engineering, March 1949.

Texas Agricultural Experiment Station Tri-Annual Report, Drying and Storage of Farm Crops by J. W. Sorenson. December 1949. Crops covered, sorghum and rice. Description of tests using batch type drier for drying sorghum; moisture and temperature relationship; operating costs using natural gas fuel and electric power; wet milling of artificially dried sorghum grain; resistance of sorghum grain to air flow; and storage of sorghum grain.

Texas Experiment Station Bulletin 710, Drying and Its Effects on the Milling Characteristics of Sorghum Grain by J. W. Sorenson, Jr., H. P. Smith, J. P. Hollingsworth, P. T. Montfort, R. A. Anderson and R. L. Zipf. June 1949. Describes equipment used in tests and procedures followed; gives complete data on moisture and temperatures during tests; summarizes results of rate of drying (low, medium and high moisture grain) air volume; cost of operation; germination; conclusions are set forth; composition of grain is shown along with the grade standards; and results of wet milling for types of sorghums tested.

U. S. Department of Agriculture Farmer's Bulletin No. 2009, Storage of Small Grains and Shelled Corn on the Farm by C. K. Shedd. September 1949. Crops covered - wheat, grain sorghum, shelled corn, oats, soybeans. Discusses grain storage under government loans and for government purchase; building requirements and bin construction; methods of conditioning grain with natural ventilation; forced air either heated or unheated; recommendations for moisture contents; temperature; depth of grain and air flow; discusses fire hazards; insect protection; methods of fumigation; and lists grain storage plans available.

U. S. Department of Agriculture, a reprint of a paper, Progress in Methods of Drying Corn by C. K. Shedd. Agricultural Engineering, March 1949. Summarizes results of tests of batch drying of shelled corn at Indiana, Illinois, and Iowa, Michigan and Ohio; improvement of commercial driers; and safety controls for oil-burning driers.

GRAIN - 1949 (Cont'd.)

West Virginia, Seed Treater and Dryer. Plans are available from the University.

GRAIN - 1948

Illinois - See U. S. D. A. Information Series No. 89, Mechanical Drying of Corn on the Farm. September 1948.

Indiana - See U. S. D. A. Information Series No. 89, Mechanical Drying of Corn on the Farm. September 1948.

Iowa - See U. S. D. A. Information Series No. 89, Mechanical Drying of Corn on the Farm. September 1948.

Michigan - See U. S. D. A. Information Series No. 89, Mechanical Drying of Corn on the Farm. September 1948.

Nebraska Bulletin E. C. 738 Revised, Conditioning and Storing Corn by E. A. Olson and F. D. Yung. September 1948. Crops - shelled corn. Discusses briefly temperature and moisture requirements. Air flows are given for various depths and static pressures.

North Carolina Extension Circular No. 328, Drying Crops with a Flue Tobacco Barn by H. M. Ellis and J. W. Weaver, Jr. October 1948. Crops covered - shelled corn, wheat, oats, barley, grain sorghum. Shows plans of the dryer; installation and operation of the equipment; crop drying table gives requirements for air, heat, static pressure, depth of crop, drying time, capacity of dryer, and drying season.

Ohio - See U. S. D. A. Information Series No. 89, Mechanical Drying of Corn on the Farm. September 1948.

Texas Progress Report No. 1138, Drying Rice in Sacks by J. W. Sorenson, Jr., W. C. Davis and J. P. Hollingsworth. November 22, 1948. Brief history of past developments; refers to Progress Report 1070, "Hay and Grain Drying" - 1946, for description of drier used; explains procedure followed; effect on billing and germination; includes table giving general information and a table showing effect of temperature during drying and initial moisture content on germination and milling quality; and summary of results giving recommendations.

Texas Progress Report to the Texas Farm Electrification Committee, Drying Sorghum Grain with Heated Air by J. W. Sorenson, H. P. Smith, J. P. Hollingsworth, P. T. Montfort. April 1948. Information same as that contained in Bulletin 710, "Drying and its Effects on the Milling Characteristics of Sorghum Grain," June 1949.

GRAIN - 1948 (Cont'd.)

Texas Progress Report to the Texas Farm Electrification Committee, Resistance of Grain Sorghum to Air Flow by E. A. Stewart. April 1948. Brief review of necessity for means of drying grain artificially; importance of proper design and selection of equipment; static pressures and air volumes and their relationship to fan size and drier size; test equipment used; procedures followed; and tables showing relationship of grain depth and air volume to static pressure.

Texas Progress Report to the Texas Farm Electrification Committee, Rice Drying - 1947. April 1948. Refers to Progress Report No. 1070, March 1947, for drier description; objectives of tests; general data from tests; and recommendations which are indicated by results of tests.

U. S. Department of Agriculture reprint of a paper entitled, Types and Performance of Farm Grain Driers by W. V. Hukill, BPISAE. Agricultural Engineering, February 1948. A general discussion of drying problems; temperatures; air movement; limitations of driers; and utilizing all the heat of combustion. Crops - wheat, rice, shelled corn.

U. S. Department of Agriculture Information Series No. 89, Mechanical Drying of Corn on the Farm by C. K. Shedd. September 1948. Covers essential differences between drying ear corn and shelled corn; discusses batch and continuous flow drying; results of tests are presented; temperatures recommended; and depth of crop and rate of air flow.

GRAIN - 1947

Georgia mimeographed bulletin, Determining Fan Capacities for Mechanical, Platform-type, Blue Lumino Seed Driers by J. W. Simons. May 1947. Discusses air volume; drier types which are applicable; determining fan capacity; depth of crop (loose and bagged); and charts showing static pressures for various air flows and depth of crop.

Texas Progress Report No. 1070, Hay and Grain Drying 1946 by J. W. Sorensen, Jr., P. T. Montfort, H. P. Smith and J. P. Hollingsworth. March 1947. Crops covered - grain sorghum, rice, Dallis grass seed, cowpeas, Sudan grass seed, Rescue grass seed. General considerations for use of heated air in farm drier; air requirements for various crops; static pressures; summary of 1946 results; description of equipment; description and operation of several individual farm drying installations; and commercial drier development.

GRAIN - 1947 (Cont'd.)

U. S. Department of Agriculture reprint of a paper entitled, Basic Principles in Drying Corn and Grain Sorghum by W. V. Hukill. Agricultural Engineering, August 1947. A general discussion of the factors affecting the economic operation and design of grain driers with suggestions as to how approximate drying time can be computed, and summary of a few test results. Crops covered - grain sorghum.

GRAIN - 1946

Tennessee Valley Authority Special Report No. 27, Drying Grain with Unheated Air by G. E. Zerfoss. January 1946. Describes laboratory air flow studies; results of laboratory tests; field trials; design of the grain drier; air capacities and static pressures; moisture tests; germination tests; labor saving features; and drying grain with conventional barn hay drier system. Crops - barley, oats, crimson clover seed, and others.

GRAIN - 1943

Iowa reprint of a paper, Resistance of Shelled Corn and Bin Walls to Air Flow by S. M. Anderson. Agricultural Engineering, November 1943. A discussion of procedures; test equipment and summary of tests performed; effects of settling; clean corn; foreign matter; and resistance of steel sheets of various types. Crop - shelled corn.

GRAIN - 1937

Oregon Station Bulletin 352, Corn Drying by F. E. Price and Ivan Branton. June 1937. Crop - shelled corn. A very thorough presentation of shelled corn drying; many useful diagrams and charts; construction and operation of drier; use of heated air; costs of drying; and power requirements.

HAY - 1949

Connecticut Extension Service Folder 27, Grass Silage and Mow-Dried Hay. April 1949. Discusses advantages and disadvantages of grass silage and mow-dried hay; harvesting methods; factors to consider such as equipment; size of enterprise; proper types of forages; lime and fertilizers; seed mixtures; silos; and feeding of grass silage.

Kentucky unnumbered mimeographed bulletin, Drying Hay in the Barn. September 1949. Discusses installation and operation of drying system; general building requirements; and compares field cured and barn cured hay by briefly discussing nutrients or feeding value. This bulletin is very general in its scope and does not give complete details on all problems of design and operation. Chopped, baled or long hay.

Maine Extension Circular No. 252, Barn Hay Drying Saves Feed. February 1949. Crops - long, chopped or baled hay. Discusses design and operation of drying system; mechanical equipment and location; partially curing in field; putting hay into drier; operating suggestions; and use of supplemental heat.

Michigan unnumbered bulletin, Barn Hay Driers in Michigan by W. H. Sheldon, D. E. Wiant and S. T. Dexter. May 1949. Crops - long chopped and baled hay. Discusses moisture content of hay; drying time; conditions of hay showing average moisture content; amount needed to make a ton of dry hay; amount of water removed to make a ton of dry hay; equipment requirements; planning the barn hay drier; how to determine air requirements; static pressure; power needed; structure requirements; fan selection. Discusses both slatted floor and lateral duct type; and how to use the drier to best advantage.

Nebraska 62nd Annual Report of Agricultural Experiment Station, Hay Drying with Forced Air by F. D. Yung, G. M. Peterson, T. A. Kiesselbach, J. V. Dunlap and Frank Miller. May 1949. Describes the methods and equipment used during the tests in 1948. No recommendations made.

New Hampshire Extension Folder 17, Barn Hay Drying Saves Feed. January 1949. Recommends methods for handling hay; design requirements; mechanical equipment and location; moisture content for drying; operation of the dryer; and use of supplemental heat. Crops - long, chopped and baled.

New Jersey Leaflet, Barn Hay Drying Saves Feed. 1949. Recommends methods for handling hay; design requirements; mechanical equipment and location; moisture content for drying; operation of the dryer; and use of supplemental heat. Crops - long, chopped and baled.

- North Carolina Progress Report, Mechanization of Peanut Harvesting and Artificial Drying of Peanuts and Peanut Hay by N. C. Teter and G. W. Giles. August 1949. Describes research methods and equipment used; general purpose drier used (see "Farm Crop Dryer"); feeding trials are described and nutrients evaluated; increase in value of crop is shown; and charts are included showing pertinent results.
- North Carolina Agricultural Engineering Information Circular No. 2. An Analysis of Principal Crop Production and Distribution in North Carolina to Determine the Preliminary Requirements and Specifications for a Farm Crop Dryer by J. W. Weaver, Jr., S. H. Usry, N. C. Teter. January 1949. Crops - chopped, baled and long. Gives production figures and locations for state; potential drying and curing needs by principal crop areas; drying volume needed for specified crops; recommendations for air; static pressures; heat; depth of crop are given; and potential drying or curing seasons.
- North Carolina Agricultural Experiment Station unnumbered pamphlet, Farm Crop Dryer. May 1949. Crops - long, chopped or baled. Plans for crop drying building; recommendations for air temperature, moisture; depth of crop, time required; and maximum capacity of installation.
- North Carolina mimeo, A Summary of Three Tests of Drying Baled Alfalfa in Crop Drying Building at Central Experiment Station, Raleigh, North Carolina. August 1949. No recommendation given.
- Oregon Station Circular of Information No. 449, A Homemade Circular Hay Keeper by Dale E. Kirk. February 1949. Crop-chopped hay. Contains plans and bill of materials for constructing circular hay keeper; how much it will hold and how it can be filled and emptied; explains operation by natural draft; operation by forced air either heated or unheated; and equipment requirements.
- Pennsylvania mimeographed bulletin, Barn Hay Finisher by C. H. Bingham. June 1949. Crops - long and baled. Discusses fan motor and air requirements; designing of drying system; and operation of system.
- Texas Agricultural Experiment Station Tri-Annual Report, Drying and Storage of Farm Crops by J. W. Sorenson. December 1949. Crops covered - baled and chopped hay. Drying time and cost of fuel and power per ton are discussed. Describes tests using portable drying unit and a modified farm trailer.
- U. S. Department of Agriculture mimeographed bulletin, 1948 Mow Hay Drying Research. BPISAE. May 1949. Summarizes work performed in 1948 and proposed investigations for 1949 at the state agricultural colleges.

HAY - 1949 (Cont'd.)

Vermont Extension Service Leaflet, Barn Hay Drying Saves Feed.

Recommends methods for handling hay; design requirements; mechanical equipment and location; moisture content for drying; operation of the dryer; and use of supplemental heat. Crop - long, baled or chopped.

Virginia mimeographed bulletin, Comparison of Barn-Cured and Field-Cured Alfalfa Hay by G. H. Rollins, P. M. Reaves, J. F. Eheart and W. N. Linkous. Summarizes the results of feeding trials made with barn-cured and field-cured hay; effect on body weights; milk production; and compares carotene content, chemical composition and digestibility coefficients.

HAY - 1948

Indiana mimeographed Bulletin No. 13, Planning and Operating a Mow Hay Curing System by A. W. Cooper and E. L. Miller. November 1948. Chopped, baled or long hay. Discusses and describes construction and use of different types of drying systems, slatted floor, triangular duct and rectangular duct; selection of fan and other equipment; and operating instructions. Use of supplementary heat is still in the experimental stage.

Oregon Extension Bulletin 669, Making and Feeding Grass and Legume Silage in Western Oregon by M. G. Huber, R. W. Morse and E. R. Jackman. January 1948. A comprehensive discussion of silage making; compares space requirements for hays, grass silage and corn silage; and compares feeding values of hay and silage. Figures are favorable to silage.

Texas Progress Report to the Texas Farm Electrification Committee, A Study of Alfalfa Dehydrating Plants in the Brazos River Valley by E. A. Stewart. April 1948. Brief history of alfalfa production in the U. S.; importance of alfalfa in Texas; uses for alfalfa meal; U. S. alfalfa meal production 1943-1947; alfalfa hay and meal production in Texas 1935-1947; alfalfa meal production in Texas 1943-1947; average and maximum precipitation per month for College Station, Texas; analysis of various types of alfalfa meal; equipment used by plants; cost of equipment; moisture content of alfalfa hay and meal; analysis of alfalfa meal processed in 1947; and summary and conclusions.

Virginia mimeographed paper, Fundamental Factors in Forage Drying Research by Roy B. Davis. May 7, 1948. Reviews production of hay in Virginia; general climatic conditions which prevail; possible losses due to bad weather; history of hay drying research in Virginia; drying characteristics of hay; moisture; air flow - pressure relationship; and changes in nutritional values during drying. Recommended system, "slatted floor drier" with air velocity of 15 to 20 feet per minute through the hay.

HAY - 1948 (Cont.)

Virginia reprint of paper, Supplemental Heat in Mow Drying of Hay - Part II by R. B. Davis, Jr. and G. E. Barlow, Jr., Agricultural Engineer. June 1948. Describes equipment and procedures used in laboratory tests; effect of temperature and humidity on drying rate; general observations. No recommendations are given.

Virginia Bulletin VFEC-2 (Revised), Dry Your Hay the Electric Way. July 1948. Crop-long hay; describes the slatted floor system; discusses shelter for drier; types of fans recommended, their characteristics and power requirements; operation and care of the system; harvesting pointers; costs of drier and electric energy; and comparison of barn and field cured hay.

Washington report, Pea Vine Drying by W. E. Matson and McKay. 1948. Describes new type drier; power requirements; energy cost per ton; use of heated air; static pressure; depth of crop; and drying time.

Washington report, Bean Vine Drying by W. E. Matson and Buckman. 1948. Discusses comparative feed value of pea vine and bean vine hay; power requirements; tests using a small experimental pilot dryer; results of tests show time required to dry, air requirement; static pressure; and moisture content.

Wisconsin Stencil Bulletin No. 5, Mow Drying of Chopped and Long Hay by F. W. Duffee and H. D. Bruhn. May 1948. Discusses labor requirements to move hay from windrow to barn by various methods; moisture content; length of cut; density of field cured and barn cured chopped hay; operation of drier; mechanical equipment; use of waste heat; portable drying units using heated air; and design of hay drier system.

HAY - 1947

North Carolina reprint of paper, Drying Baled Hay with Forced Air by J. W. Weaver, Jr., C. D. Ginnells and R. L. Lovvom. Agricultural Engineering. July 1947. Reviews hay drying in Southeast; objectives of research; describes management of hay prior to tests; methods of baling; moisture content; air flow through bales; temperature of bales during drying; and summary of results.

Tennessee Valley Authority Special Report No. 34, Drying Hay by Forced Circulation of Air by A. T. Hendrix and G. E. Zorffoss. October 1947. Crop-chopped and baled. Compares slatted floor system with open side lateral system as to depth of hay and static pressure. Discusses heat generated in hay and effect of moisture in hay on hay temperatures; resistance of baled hay to air flow; drying chopped hay in round structures for drying, storing and feeding; types of structures, plywood and steel; use of round structures; and general results.

HAY - 1947 (Cont'd.)

Texas Progress Report No. 1070, Hay and Grain Drying 1946 by J. W. Sorenson, Jr., P. T. Montfort, H. P. With and J. F. Hollingsworth. March 1947. Crops covered - alfalfa hay, (long, baled and chopped) and peanut hay (long and chopped). General considerations for the use of heated air; air requirements; static pressures; summary of 1946 results; description of equipment; description and operation of several individual farm drying installations; and commercial drier development.

Virginia, Supplemental Heat in Mow Drying of Hay by R. B. Davis, Jr. Agricultural Engineering, July 1947. Crop covered - long hay. Describes methods and procedures; cost of supplemental heat; investment in heating unit; grades of hay obtained; and summary.

Virginia, Mow Drying Chopped and Long Alfalfa Hay by R. B. Davis, Jr. Agricultural Engineering, March 1947. Describes equipment and procedures; rate of drying; air flow through hay; depth of hay and pressure drop; quality comparison; and summary.

Virginia Information Series 78, Mow-Dried Hay by L. G. Schoenleber and Roy B. Davis. April 1947. Crop-long hay. Discusses types of systems; building requirements; operation; costs; labor requirements for barn-dried, field-dried and silage; and quality of forage by different methods.

HAY - 1946

Iowa reprint of a paper, Resistance of Hay to Air Flow and Its Relation to Design of Barn Hay-Curing Equipment by C. K. Shedd. Agricultural Engineering, April 1946. A discussion of procedures, equipment and results of tests conducted and relationship to drier design.

Ohio reprint of paper in Agricultural Engineering, Air Flow in Drying Baled Hay with Forced Ventilation by R. C. Miller. May 1946. Describes the hay drying installation on a particular farm; gives results of tests conducted; includes pictures and charts; power requirement; and cost.

Oregon Experiment Station, Progress Report on New Type Hay Driers. December 2, 1946. Gives general barn requirements; arrangement of drier; air specifications; supplemental heat recommendations; design of drier; operating instructions; and installation and operation costs.

HAY - 1946 (Cont'd.)

Virginia Farm Electrification Circular 3, Handbook on Design of Slatted Floor Barn Hay-Driers by R. E. McKnight. June 1946. A complete presentation of the slatted floor type of hay drier covering the following: building requirements; parts of system and their use; types of air distribution systems; selecting mechanical equipment; design of system; examples of design problems; and formulas. Contains pictures and plans.

Virginia, A Forced Ventilation Hay Drier by A. T. Hendrix. Agricultural Engineering, March 1946. A review of the basic data found by previous tests which affect the design and operation of barn hay driers.

Virginia, Observations on the Resistance of Hay to Air Flow by A. T. Hendrix. Agricultural Engineering, May 1946. Crops covered - alfalfa (long, chopped and baled), peanut hay, and mixed hays and grasses. Reviews procedure and equipment used, and presents data showing pertinent results for laboratory and field tests.

HAY - 1945

Tennessee Valley Authority Agricultural Engineering Publication No. 6, Barn Haydrier, Design, Installation, Operation by J. A. Schaller, Nolan Mitchell and W. H. Dickerson, Jr. April 1945. Crops - chopped, baled or long hay. This is a comprehensive bulletin on hay driers which covers quite completely the following: general history; need; development; effect on quality of hay; cost of installation; cost of operation; and farmer acceptance. Discusses design of driers; selection of equipment; installation; operation and management; use of supplemental heat; engineering data; and selected references. Includes many drawings, tables, charts and pictures.

Virginia, Resistance of Hay to Air Flow by A. T. Hendrix. Agricultural Engineering, September 1945. Crops covered - alfalfa (long), and peanut hay. Describes procedure and equipment used in tests; and evaluates results and makes recommendations.

HAY - 1944

Illinois mimeographed bulletin, Progress Report on New Curing of Hay by J. H. Ramsor. February 25, 1944. Summarizes progress of hay drying tests; no conclusions given; charts show power requirements; moisture contents; and rate of drying. Crops covered are, alfalfa (long, chopped and crushed), soybean hay.

HAY - 1944 (Cont'd.)

Tennessee Valley Authority Special Report No. 25, Barn Haydriers by G. E. Zerfoss and W. E. Dickerson, Jr. November 1944. Crops - chopped, long hay and soybean hay. Description of gasoline engine fan unit to deliver pre-heated air; educational activities in Southeastern states; activities of the manufacturers; field trial of gasoline engine driven unit; curing chopped hay on barn haydrier; design of a plywood fan; methods of determining rate of moisture removal from hay; comparison of barn dried with field dried hay; and map showing distribution of haydriers in Southeast.

HAY - 1943

Ohio reprint of paper on Drving Hay with Forced Ventilation by R. C. Miller and G. R. Shier. Agricultural Engineering, May 1943. Discusses hay making in general; results of University of Tennessee studies; describes several Ohio farm installations; and describes the installation at the University Farm and various tests along with results.

North Carolina Agricultural Engineering Information Circular No. 2,
An Analysis of Principal Crop Production and Distribution in
North Carolina to Determine the Preliminary Requirements and
Specifications for a Farm Crop Dryer by J. W. Weaver, Jr.;
S. H. Usry; N. C. Teter. January 1949. Gives production figures
and locations for state; potential drying needs by principal
crop areas; drying volume needed for crop; recommendations for air,
static pressures, heat, depth of crop are given; and potential
drying needs.

Georgia mimeographed progress report, Peanut Drying by J. L. Shepherd and W. D. Kenney. Reviews studies made in 1948 describing equipment used and procedures followed. Results showed need for further intensified studies before conclusions could be reached. No recommendations made.

North Carolina Agricultural Experiment Station unnumbered pamphlet, Farm Crop Dryer. May 1949. Plans for crop drying building; and recommendations for air temperature, moisture, depth of crop, time required, and maximum capacity of installation.

North Carolina Progress Report, Mechanization of Peanut Harvesting and Artificial Drying of Peanuts and Peanut Hay by N. C. Teter and G. W. Giles. August 1949. Describes research methods and equipment used; general purpose drier used (see "Farm Crop Dryer"); research results explained; values and yields are compared with field drying; and germination tests are summarized. Future efforts will be directed toward harvesting methods. Charts are included showing pertinent results.

North Carolina Agricultural Engineering Information Circular No. 2, An Analysis of Principal Crop Production and Distribution in North Carolina to Determine the Preliminary Requirements and Specifications for a Farm Crop Dryer by J. W. Weaver, Jr., S. H. Usry, N. C. Teter. January 1949. Gives production figures and locations for state; potential drying needs by principal crop areas; drying volume needed for crop; recommendations for air, static pressures, heat, depth of crop are given; and potential drying needs.

North Carolina reprint of paper, The Development of a Farm Crop Drier by J. W. Weaver, Jr.; N. C. Teter and S. H. Usry. Agricultural Engineering, October 1949. Discusses past history and development; crop conditioning installations in Southeast; drying needs; and describes crop drying building.

Oklahoma mimeographed report, Drying Peanuts by C. V. Phagan. Reviews tests made in 1948 describing equipment used and procedures followed. No recommendations made.

Texas Agricultural Experiment Station Tri-Annual Report, Drying and Storage of Farm Crops by J. W. Sorenson. December 1949. Drying in sacks or bulk; subfloor design is best; average cost for fuel; moisture contents; portable air distribution system; and temperature limits.

PEANUTS - 1948

North Carolina Extension Circular No. 328, Drying Crops with a Flue Tobacco Barn by H. M. Ellis and J. W. Weaver, Jr. October 1948. Shows plan of the dryer; installation and operation of equipment; crop drying table gives requirements for air, heat, static pressure, depth of crop, drying time, capacity of drier; and drying season.

Texas reprint of paper in Agricultural Engineering, Drying Peanuts with Heated Air by J. W. Sorenson, Jr. September 1948. Methods of harvesting; describes use of several privately-owned barn hay driers for drying peanuts; and summarizes tests at college. No definite conclusions are given.

Texas Progress Report No. 1124, Harvesting and Drying Peanuts in Texas by B. C. Langley, J. W. Sorenson, Jr., W. E. McCullough and H. P. Smith, June 22, 1948. Discusses tests on mechanical harvesting methods; combine thresher design changes and results; use of forage cutter to remove vines before peanuts are dug; disposal of hay; use of shaker-windrow attachment; drying procedure; description of equipment; operation of the drier; rate of drying; temperatures; chemical analysis of peanuts after drying; effects of drying on germination; cost of operation; and recommendations which can be indicated from results of tests.

Texas Progress Report to the Texas Farm Electrification Committee, Drying Peanuts with Heated Air by J. W. Sorenson. April 1948. This is the complete paper from which the reprint of article in September 1948 Agricultural Engineering was taken; contains detailed information including charts on general data, and chemical properties of peanuts and germination results.

PEANUTS - 1947

North Carolina Progress Report (Revised), Artificial Drying of Freshly Dug Spanish and Runner Peanuts without Forage by N. C. Teter. December 1947. Discusses measurement of moisture; compares wet basis with dry basis; describes equipment used in tests and procedure followed; reviews results on all tests with pertinent data shown on charts and graphs; and recommendations given for temperature and moisture limitations.

Texas Progress Report No. 1070, Hay and Grain Drying 1946 by J. W. Sorenson, Jr., P. T. Montfort, H. P. Smith and J. P. Hollingsworth. March 1947. General considerations for the use of heated air; air requirements; static pressures; summary of 1946 results; description of equipment; description and operation of several individual farm drying installations; and commercial drier development.

POTATOES - 1949

North Carolina Agricultural Engineering Information Circular No. 2, An Analysis of Principal Crop Production and Distribution in North Carolina to Determine the Preliminary Requirements and Specifications for a Farm Crop Dryer by J. W. Weaver, Jr.; S. H. Usry; N. C. Teter. January 1949. Crop - Sweet Potatoes. Gives production figures and locations for state; potential drying needs by principal crop areas; drying volume needed for crop; recommendations for air, static pressures; heat, depth of crop are given; and potential drying needs.

POTATOES - 1947

U. S. Department of Agriculture Farmer's Bulletin No. 1986, Potato Storage by A. D. Edgar. October 1947. Discusses need for storage; storage requirements; storage plans and factors in plan selection; types of storages; construction of storages and their operation; insulation; condensation; air circulation; ventilation; heating; dimensions of bins; safety features; cost estimates for masonry; lumber; and insulation and vapor proofing and miscellaneous items.

North Carolina Agricultural Engineering Information Circular No. 2, An Analysis of Principal Crop Production and Distribution in North Carolina to Determine the Preliminary Requirements and Specifications for a Farm Crop Dryer by J. W. Weaver, Jr.;

S. H. Usry; N. C. Teter. January 1949. Gives production figures and locations for state; potential drying needs by principal crop areas; drying volume needed for crop; recommendations for air, static pressures, heat, depth of crop are given; and potential drying needs.

North Carolina reprint of paper, The Development of a Farm Crop Drier by J. W. Weaver, Jr., N. C. Teter and S. H. Usry. Agricultural Engineering, October 1949. Discusses past history and development; crop conditioning installations in Southeast; drying needs; and crop drying building.

SOY BEANS - 1949

North Carolina Agricultural Engineering Information Circular No. 2, An Analysis of Principal Crop Production and Distribution in North Carolina to Determine the Preliminary Requirements and Specifications for a Farm Crop Dryer by J. W. Weaver, Jr.; S. H. Usry; N. C. Teter, January 1949. Gives production figures and location for state; potential drying needs by principal crop areas; drying volume needed for crop. Recommendations for air; static pressures, heat, depth of crop; and potential drying needs.

North Carolina reprint of paper, The Development of a Farm Crop Drier by J. W. Weaver, Jr., N. C. Teter and S. H. Usry. Agricultural Engineering, October 1949. Discusses past history and development; crop conditioning installations in Southeast; drying needs; and describes crop drying building.

North Carolina Agricultural Experiment Station pamphlet, Farm Crop Drier. Plans for crop drying buildings; and recommendations for air, temperature, moisture, depth of crop, time required, maximum capacity of installation.

U. S. Department of Agriculture Farmers' Bulletin No. 2009, Storage of Small Grains and Shelled Corn on the Farm by C. K. Shedd. September 1949. Discusses grain storage under government loans and for government purchase; building requirements and bin construction; methods of conditioning grain with natural ventilation; forced air, either heated or unheated; recommendations given for moisture contents, temperature, depth of grain and air flow; discusses fire hazards; insect protection; methods of fumigation; and lists grain storage plans available.

SOY BEANS - 1948

North Carolina Extension Circular No. 328, Drying Crops with a Flue Tobacco Barn by J. M. Ellis and J. W. Weaver, Jr. October 1948. Shows plan of dryer; and installation and operation of equipment. Crop drying table gives requirements for air, heat, static pressure, depth of crop, drying time, capacity of drier, and drying season.

SUGAR BEETS - 1949

Michigan reprint of paper, The Storage of Sugar Beets by

C. M. Hansen, Agricultural Engineering, August, 1949.

Experiments designed for determining methods of storing beets commercially; describes drying installations; temperature measurement; air requirements; sugar losses; and methods of treatment prior to conditioning humidity of air.

TOBACCO - 1949

North Carolina Agricultural Engineering Information Circular No. 2, An Analysis of Principal Crop Production and Distribution in North Carolina to Determine the Preliminary Requirements and Specifications for a Farm Crop Dryer by J. W. Weaver, Jr., S. H. Usry, and N. C. Teter, January 1949. Crops - bright and burley. Gives production figures and locations for state; potential curing needs by principal crop areas; curing volume needed for specified crops; recommendations for curing are given; and potential curing season.

North Carolina reprint of paper, The Development of a Farm Crop Drier by J. W. Weaver, Jr., N. C. Teter, S. H. Usry. Agricultural Engineering, October 1949. Discusses past history and development; crop drying installations in Southeast; drying needs; and crop drying building.

TOBACCO - 1946

North Carolina Agricultural Engineering Information Circular No. 1, Humidity in Bright Leaf Tobacco Curing by Norman C. Teter. November 1946. Discusses use of wet and dry bulb thermometer; use of the hygrometer; handy table for finding relative humidity; ventilation methods; steps in tobacco curing given temperatures, humidities and time; describes undesirable conditions of tobacco and suggests ways to avoid them; and suggested schedule for curing record is included; references.

WALNUTS - 1949

West Virginia, Walnut Meat Pastourizer. Plans are available
from the University.

